

Table 3, Experiment B (cont.)

| | Z3-3 | Z3-4 | Z17-3 | Z17-11 |
|------------------------------------|----------|----------|----------|----------|
| "T" for unpaired test to C-1 | | | | |
| (df) | 2.70(12) | 0.53(12) | 2.34(12) | 2.72(12) |
| Probability | 0.019 | 0.61 | 0.038 | 0.019 |
| Significance | * | NS | * | * |

Mean total fresh weight for transgenic lines (in grams) and controls at week 6. The statistical analysis was done for the final week's measurement only, and in the case of experiment II control-1 (C-1) was selected for the T-test. df - degrees of freedom; The probability of the populations being related was deemed to be highly significant (**) for $P < 0.001$, significant (*) for $P < 0.05$, and marginally significant ((*)) for $P < 0.01$. NS = not significant.

except Z3-4 outgrew controls by between 40 and 44% and the difference in fresh weights at six weeks was statistically significant (Table 3). These results are also shown graphically in Figure 9, panel B. It is apparent that the second growth experiment corroborated the results of the first, suggesting that ectopic overexpression of wither pea cytosolic GS1 or GS3A enhanced growth rate in tobacco; in all lines tested GS3A overexpression gave an increase in growth rate which was statistically significant increases in growth rate to the transgenic tobacco, compared to non-transformed controls.

6.2.10. QUALITATIVE EFFECT OF GS OVEREXPRESSION ON PLANT GROWTH

Figure 10 demonstrates a qualitative comparison of the growth phenotype of plants which overexpress GS (Z3-A1 and Z17-B7) to those of control plants and plants co-suppressed for GS (Z54-A2). The results demonstrate that even low level GS overexpression results in readily discernible growth improvements (Figure 10, compare the